DRY EYE

Top tips for MURs

- Check patient understands why medication has been prescribed
- Advise patient that dry eye is a chronic condition and ongoing adherence to treatment is essential to manage the condition. It can take up to 6 weeks to see an improvement
- Check that patients with moderate or severe dry eye have been referred to optometry for further assessment
- Advise patient on the importance of regularly administering eye drops (dosage is normally twice a day – hypromellose may need to be applied more frequently)[4]
- Assess whether patients are able to use the products prescribed. Some patients may prefer preparations squeezed from tubes or bottles or larger "pump-action" multiuse bottles or sprays. Consider whether eye drop dispensers may be of benefit[4]
- Advise patient to avoid contact with the eye when instilling drops to reduce contamination and to replace the cap after use
- Assess the need for preservative-free eye drops, for example, if patients have moderate to severe dry eye or are using dry-eye drops 4 or more times a day[2]
- Advise patient on storage and expiry dates for dry-eye products
- Dry eye may be caused by failure of the oil secreting glands, therefore, recommend use of a warm compress such as an eyelid warming mask for 10 minutes twice daily[4]
- Recommend good eye-lid hygiene via use of commercial wipes / gels or diluted baby shampoo twice daily[4]
- In contact lens wearers suggest referral to optometrist to assess suitability of contact lens or solution used
- Check compatibility of contact lenses with dry eye products (most preservative containing drops are not compatible). Patients should leave a 15 minute gap between applying lubricant and inserting their lenses[4]
- Assess other medications and consider whether these may be causing dry eye (for example antihistamines, antidepressants, diuretics, oral contraceptives and isotretinoin)
- Counsel patients on signs/ symptoms that may need referral and common side effects **(see overleaf)**
- Report any relevant adverse drug reactions to the Yellow Card Scheme

Pathophysiology of dry eye

Dry eye is a multifactorial disease of the tears and ocular surface accompanied by increased osmolarity of the tear film and inflammation of the ocular surface[6]. There are two main subtypes, aqueous deficient dry eye (occurring when the lacrimal glands fail to produce enough liquid and proteins) and evaporative dry eye (occurring when the meibomian glands fail to secrete enough oil to maintain the lipid layer of the tear)[4]. Both types lead to symptoms such as red, gritty or watery eyes. Various factors influence the quality of the tear film, for example drugs (e.g antihistamines), contact lenses, blepharitis, low blink rate, allergic conjunctivitis, trauma, dehydration and environmental factors such as smoke, wind or heat [2]. Most cases are idiopathic although there may be an association with inflammatory disease e.g. rheumatoid arthritis.

How do drugs used to treat dry eye work[4]?

*Note ciclosporin and corticosteroids are only used in severe cases.

Hypromellose	A soothing emollient which moistens the surface of the eye acting as a tear replacement. First line treatment agent.
Carbomers	Viscoelastic lubricant that binds moisture to the eye surface.
Sodium hyaluronate	Viscoelastic agent that lubricates and protects the ocular surface.
Paraffin ointments	High viscosity polymer used to lubricate the eye surface.
Acetylcysteine	Breaks up sticky mucus in the tear film.
Polyvinyl alcohol	Lubricant that works by increasing the persistence of the tear film.
Liposomal sprays	Replenishes the oily tear film and reduces evaporation from the eye surface.
Ciclosporin drops*	Inhibits interleukin-2-activation of lymphocytes, reduces inflammation, and increases tear film stability. Only used in severe dry eye.
Corticosteroid drops*	Reduces inflammation via inhibition of immune cells such as macrophages and cytokines.

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Lifestyle issues[2,4]

- Consider work and home environments. Warm, centrally heated spaces or air conditioning can exacerbate dry eye
- Limit contact lens use
- Use a humidifier to moisten the air atmosphere
- If using a computer for long periods ensure the patient takes regular screen breaks and blinks often
- There is some evidence to suggest that eating a healthy, balanced diet high in omega 3 fats (e.g. oily fish, various nuts and seeds, vegetable oils, soya and soya products) can help improve symptoms
- Counsel patient on reducing alcohol intake to within safe limits (up to 14 units a week, spread evenly over 3 or more days)
- Counsel patient on healthy eating, exercise & weight loss (if BMI > 25kg/m^2) – reduce saturated fat and salt intake, avoid salt substitutes, increase oily fish intake, complete 30 minutes of aerobic exercise three to five times a week, reduce caffeine intake to no more than 5 cups a day and recommend 5 portions of fruit and vegetables a day
- Advise patients who smoke of the benefits of stopping smoking and how to access pharmacy smoking cessation services or Stop Smoking Wales

What are the common side effects to look out for?[5]

Drug	Common side effects	Recommendation
Hypromellose, Carbomers, Sodium Hyaluronate, Polyvinyl alcohol, Liposomal sprays, Acetylcysteine	Mild stinging or temporary blurred vision, itching, redness, irritation	Normally transient, if persists refer to prescriber. Consider using a preservative-free product if using regularly.
Paraffin Ointments	Uncomfortable, blurred vision	Use at night, avoid use with contact lenses, do not drive if affected.
Ciclosporin drops* **Corticosteroid drops***	Temporary blurred vision Stinging, redness, irritation	Do not drive until vision is clear. If persists refer to prescriber. Short term use recommended <1 week (with corticosteroid drops)

*Note ciclosporin and corticosteroids are only used in severe cases.

Potential serious drug interactions?

See BNF Appendix1 for more details

Red flags that need referral[4]

- Any symptoms of eye pain, foreign body sensation or photophobia
- Any sudden onset of symptoms
- Any reduced vision that doesn't resolve after blinking
- Stickiness crusting or discharge of the eye
- One eye more affected than the other
- Systemic symptoms such as dry mouth/ vaginal dryness or known inflammatory disease

Where can you find more information?

1. Dry eye – BNF subsection 11.4.2
2. Clinical knowledge Summary – Dry eye syndrome (**http://cks.nice.org.uk/dry-eye-syndrome.**)
3. Understanding dry eye – The Royal Collage of Ophthalmologists guidelines
4. Pharmaceutical Journal – Focus on Dry Eye Series: June-October 2016
5. Summary of product characteristics (SPC)
6. 2007 Report of the International Dry Eye WorkShop (DEWS). (**http://www.tearfilm.org/dewsreport/pdfs/TOS-0502-DEWS-noAds.pdf**)
7. National Health Service. NHS choices: Dry eye syndrome (**http://www.nhs.uk/Conditions/Dry-eye-syndrome/Pages/Introduction.aspx**).

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